

## ABSTRACT OF THE DISCLOSURE

A method of fabricating an optical device by providing a nematic liquid crystal; providing a photo-curable pre-polymer mixture; mixing the nematic liquid crystal with the photo-curable pre-polymer mixture to form a homogeneous nematic/pre-polymer mixture, with the nematic liquid crystal representing greater than 40% (by weight) of the combined homogeneous mixture. Providing a cell including a pair of transparent substrates that are each coated with a transparent conductive layer when creating an electrooptic device and omitting the conductive layers when creating a static device. Separating the substrates by approximately 5-20  $\mu\text{m}$  or greater; filling the cell with the homogeneous nematic/pre-polymer mixture; and photo-curing the nematic/pre-polymer mixture using a spatially inhomogeneous illumination source thereby forming a polymer dispersed liquid crystal (PDLC) film exhibiting low scattering loss and high index modulation.

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